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Social representation of 'music' in young adults: A cross-cultural study

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Abstract

Objective: The present study was aimed to explore perceptions of and reactions to music in young adults (18-25 years) using the theory of social representations (TSR). ***Design:*** The study used a cross-sectional survey design and included participants from India, Iran, Portugal, United States, and United Kingdom. Data were analyzed using various qualitative and quantitative methods. ***Study sample:*** The study sample included 534 young adults. ***Results:*** The Chi-square analysis showed significant differences between the countries regarding the informants' perception of music. The most positive connotations about music were found in the responses obtained from Iranian participants (82.2%), followed by Portuguese participants (80.6%), while the most negative connotations about music were found in the responses obtained from Indian participants (18.2%), followed by Iranian participants (7.3%). The participants' responses fell into 19 main categories based on their meaning; however, not all categories were found in all five countries. The co-occurrence analysis results generally indicate that the category "*positive emotions or actions"* was the most frequent category occurring in all five countries. ***Conclusions:*** The results indicate that music is generally considered to bring positive emotions for people within these societies, although a small percentage of responses indicate some negative consequences of music.

Key Words

Music listening, Hearing loss, Public health hazard, Attitude, Social representation, Text mining, Cross-culture

Introduction

Music, according to the New National Dictionary, means "*art of combining sounds or sequences of notes into harmonious patterns pleasing to the ear and satisfying to the emotions; melody*" (Sheriff, 2014). Listening to music at home, or in certain events, or in social settings is an important part of people's everyday lives. Because of musical features, music can carry various information and convey precise expression to listeners, which may affect people's emotions and experiences. Music can be remarkably complex in terms of its frequency spectrum, ranging from frequencies of 20 Hz to about 10 kHz (Chasin & Russo, 2004). More specifically, the frequency range produced by a double bass runs from 50 Hz to 2000 Hz, and from 200 Hz to about 10 kHz for a violin (Cai et al., 2013). These sounds can be produced by the voice or by various kinds of musical instruments with their subtle acoustic characteristics in rhythmic, melodious and harmonious form, and subsequently music can be perceived accurately by listeners so as to express thought or feeling and affect emotions (Chasin & Russo, 2004).

Music perception is the process of achieving awareness or understanding of music by organizing and interpreting the features of music (Cai et al., 2013). Evidence has shown that music inspires sensations in the brain by giving pleasure, emotion, and sometimes easing off stress. For example, Juslin (2013) suggested emotions are highly correlated with musical expressions, depending on the precise process through which the emotional contents in music are transmitted and perceived by listeners. Moreover, music can provide subtle meanings, which can have positive effects on many individual lives (Ross, 2009). However, people may interpret the meaning of a musical piece differently, no matter how the music is played (whetherin the way in which the composer or performer intends or intended to express the music, or in a different fashion altogether). Although music can bridge cultures in a universal

experience and perception that is beyond intellect or reason, a number of possible common factors appear to be important in influencing music experience, perception, and interpretation, such as age, gender, education, geographical factors, cultural context, religious and social influence. For example, geographical diversity affects the nature and form of the music that strongly reflects the influence of regional characteristics and styles in music. Moreover, music is affected by religious factors when it is performed or composed for religious use or through religious influence. For example, Islamic music has its indigenous musical styles, which is sung or played in public services or private devotions.

The stratification of any given society may also affect the form and style of the music people prefer, i.e., individuals' real preferences in music is most likely relevant to the different dimensions of social stratification, which has a certain degree of influence on people's music preference as well as towards music-related behaviour (Dolan & Sharot, 2011). Such relationships between social structure and distinctions of music appear to be the result of the interaction between cultural traditions and genres of music experience and perception (Feld, 1984). Therefore, music experience and perception should be considered within cultural context, associated with its own history, invention, identity, and belonging.

Over the last decade, the literature has demonstrated that music listening has become a significant public health hazard, especially in adolescents and young adults. Listening to loud music (or noise) can result in various hearing disorders (Zhao et al., 2010; Jiang et al., 2016). However, as the effects of noise or music is related to both the intensity and duration, even moderate levels of music listening for longer durations can result in various hearing disorders (NIOSH, 1998). Although people are wary of adverse effects of loud music listening, music is generally considered as a positive aspect of life in most cultures. Hence, it is essential to

understand the perception of young adults from different cultural backgrounds in order to explore the influence of cultural, regional, and socioeconomic factors related to attitudes and behaviours towards music listening (Zhao et al., 2011).

In the present study, the Theory of Social Representation (TSR) is used to explore the attitudes and perception of young adults towards music listening. According to the TSR, social representation is conceived as a social process of communication and discourse, in the course of which meanings and social objects are generated and elaborated (Allansdottir et al., 1993). In the meanwhile, the concept of social representation is seen as individual attributes, (e.g., knowledge, character, and behaviour), which are shared with other people in a group or society. Therefore, social representation can be viewed as "*a system of values, ideas, and practices with a twofold function,*" mainly focusing on common knowledge and the processes whereby sociocultural, historical, and group-specific forces becomes sedimented in inner experiences (Joffe, 2003, p. 46).

The TSR has been well developed and applied in various research studies, particularly in the fields of Psychology and Sociology. Recently growing literature has shown important outcomes in association with attitudes towards hearing loss using the TSR (Manchaiah et al., 2015a; Zhao et al., 2015). For example, in the studies by Manchaiah et al. (2015a; 2015b), the TSR has been applied to create understanding of the social representation for *hearing loss* and *hearing aids* in the general public. The study on social representation on hearing loss suggested that the most frequently occurring categories were: assessment and management; causes of hearing loss; communication difficulties; disability; hearing ability or disability; hearing instruments; negative mental state; the attitudes of others; and sound and acoustics of the environment (Manchaiah et al., 2015a). Also, participants in India reported significantly

more positive and fewer negative associations when compared to participants from Iran, Portugal, and the UK (Manchaiah et al., 2015a). The most frequently occurring categories in the social representation of hearing aids (Manchaiah et al., 2015b) included: disability and aging; appearance and design; cost; hearing instruments; and improved hearing and communication. There was no statistically significant difference among positive, neutral, or negative connotations reported in different countries (Manchaiah et al., 2015b). These findings provide useful insights into the public perception of hearing loss that may prove useful in public education and counseling.

The aim of this study was to explore the social representation of 'music' in India, Iran, Portugal, United Kingdom, and United States, which would be helpful for better understanding of attitudes and behaviors towards music listening in the different cultural situations of these countries. Subsequently, this study could provide important information on developing 'health behavior change' and an education programme for young adults to initiate healthy music listening habits. In addition, the results derived from this study would be relevant for music therapy theory and its applications in the field of clinical audiology (such as tinnitus intervention).

Method

Ethical Considerations

Ethical approval was obtained for each country from local institutional ethical boards, which include: *All India Institute of Speech and Hearing*, Mysore, India; *Department of Audiology, University of Social Welfare and Rehabilitation Sciences*, Tehran, Iran; *School of Allied Health Sciences, Polytechnic Institute of Porto*, Porto, Portugal; *Research Ethics Committee,*

Anglia Ruskin University, Cambridge, the United Kingdom; and *Institutional Review Board*, Lamar University, Beaumont, the United States.

Study design and participants

Five countries were included in the study, which had a cross-sectional design. The countries (India, Iran and Portugal, UK and USA) differ in language, culture, and economy (see Table 1). Data were gathered using convenience sampling, and the respondents (n=534) were young adults (see Table 2).

[Table 1 near here]

Data collection

A questionnaire was used for data collection (see Appendix). In each country, researchers approached young adults via universities and city center shopping malls, requesting them to take part in the study. All those who were interested in participating received detailed information about the study, and had the opportunity to ask questions. Those who agreed to participate completed the questionnaires and return of the questionnaire was taken as consent. Participation in the study was voluntary and questionnaire completion anonymous as the participants did not provide any personal information that would compromise their identity. There was no compensation provided to participants.

The questionnaire required participants to report up to five words or phrases that immediately come to mind while thinking about "*music*" by writing them in the questionnaire. They were also asked to indicate whether each word or phrase they reported had positive, neutral, or negative connotations. Similar data was also collected for "*loud music,*" which has been

presented elsewhere (Manchaiah, Submitted). In addition, within the beginning of the questionnaire, the respondents were asked to provide some demographic information (e.g. gender, age, education, and profession).

This free association method has been used in several studies to access and analyze the semantic content of social representations (Danermark et al., 2014; Linton et al., 2013; Manchaiah et al., 2015a, 2015b). A word or short phrase (in this case *loud music*) is used to prompt associations. The spontaneous response is considered more effective in providing a better opportunity to investigate the semantic universe of the expression rather than a well thought-out response (Abric, 1994). Originally, the questionnaire was developed in English. This version was used in the UK and the USA. A well-accepted forward and back-translation method was used (Beaton et al., 2000) to translate the questionnaire into Kannada (India), Farsi (Iran), and Portuguese (Portugal).

Data analysis

Data was analyzed using both qualitative and quantitative methods in three main steps. These include: (1) categorization of associations; (2) co-occurrence analysis (based on text-mining technique); and (3) Chi-square analysis.

First, a qualitative content analysis was carried out in order to identify and group words and phrases into categories that have a similar meaning (Graneheim & Lundman, 2004). For example, responses such as motivation, relaxing, and happy fell into the category "positive emotions or actions." Responses such as ear pain, deafness, ringing in the ear, etc. fell into the category "ear and hearing problems." Another researcher checked content analysis and any ambiguity was resolved through discussion.

In the second step, a co-occurrence analysis was performed (also known as similarities analysis), which is based on the mathematical graph theory and involves studying the frequencies of each category and inter-relations between the different categories (Flament, 1965). The co-occurrence analysis was done using the Iramuteq software program, which is an R-interface for multidimensional analysis of texts and surveys (R Development Core Team, 2016; Ratinaud & Marchand, 2012). This software produces an index called a "maximum tree". The size of the nodes (represented as circles in the tree) indicates the frequency of the categories; a bigger node indicates higher frequency. The lines connecting the nodes show inter-category associations. In the maximum tree, only the strongest links are retained, and the number on each line depicts the frequency of individuals associating with both categories. For example, in Figure 1 the categories "positive emotions or actions" and "form of escape" are connected with 15 individuals who mentioned both categories when they thought about music. Hence, this maximum tree index provides an overall description of the data in terms of main categories and their associations.

The third step involved a Chi-square analysis to identify possible differences between the countries regarding reported positive, neutral, and negative connotations. The positive, negative, and neutral connotations reported by the respondents were counted and a single Chi-square analysis (with a 3 x 5 cross tab for connotations vs countries) was performed.

Results

Participants' demographics

Table 2 provides demographic details of the study participants. The average age of participants ranged between 19 to 21 years in all countries with a fairly equal spread of males

and females. Some differences were noticed in terms of education, profession, and music listening habits. Participants in India, Portugal and the United Kingdom had a higher frequency of secondary education, whereas participants in the United States had a lower frequency in secondary and post-secondary education. Iranian participants had an equal spread of compulsory and secondary education, and none from post-secondary education. Generally, there were relatively fewer (i.e., around 25%) participants working (non-manual or manual jobs) and more students (around 8%) from all countries. Music listening hours varied considerably among countries, with Indian participants having the lowest mean of about 2.68 hours a week; participants from the United States having the highest mean of about 25.52 hours a week; and the participants from the other three countries having the mean listening hours from 12 to 18 hours a week.

[Table 2 near here]

Positive, neutral and negative connotations

Significant differences between the countries were found (χ^2= 141.53; df = 8; p<0.001; N = 2665) for positive, neutral, and negative connotations. Most positive connotations about music were found in the responses obtained from Iranian participants (82.2%), followed by Portuguese participants (80.6%), while most negative connotations about music were found in the responses obtained from Indian participants (18.2%), followed by Iranian participants (7.3%). The frequencies and percentages are presented in Table 3.

[Table 3 near here]

Response categories

The participants' responses fell into 18 main categories based on their meaning (see Table 4). However, not all categories were found in all five countries, with some similarities and differences among these countries. "*Positive emotions or actions"* was the most frequently occurring category in all five countries. Other most frequently occurring categories in all countries included: form of escape, music genre, music terminology, and musical instruments. "*Negative emotions or actions*" category was also reported in all countries except in India, although much less frequently. Moreover, many reported categories reflected both positive and negative connotations (e.g., form of escape category was seen as positive in that it offers freedom whereas some people consider it negatively as it can be viewed as creatingbring distraction).

[Table 4 near here]

Social representation based on co-occurrence analysis

The co-occurrence analyses of categories associated with music are presented as an index (see Figures 1 - 6). Here the size of the nodes represent the frequency of each category, and the thickness of the lines (or the number on the line) connecting the nodes represent the extent to which the categories are related based on the responses of the study sample.

Figure 1 represents the co-occurrence analysis for India, which has one main node representing "*positive emotions or actions.*" Responses for the other categories (e.g., form of escape, positive quality of life, music technology) are relatively limited. Figure 2 represents the co-occurrence analysis for Iran, which indicates two main nodes for categories "*positive emotions or actions*" and "*negative emotions or actions*". These two categories are connected with a thick line indicating that of all the participants who motioned positive emotions and

actions, 34 participants also mentioned negative emotions or actions. Figure 3 represents the co-occurrence analysis for Portugal, which is slightly different when compared to India and Iran. Here, the co-occurrence analysis indicates main nodes for categories "*positive emotions or actions*"; however, also less frequent but equally important categories included "*negative emotions or actions,*" *"music terminology,"* and *"music artist, groups or bands."* Both the United Kingdom and the United States had similar patterns in terms of co-occurrence analysis (see Figures 4 and 5), which indicate main nodes for categories "*positive emotions or actions,*" "*music genre,*" *"music terminology,"* and *"acoustics."*

[Figure 1 near here]

[Figure 2 near here]

[Figure 3 near here]

[Figure 4 near here]

[Figure 5 near here]

Comparison of co-occurrence analysis graphs across countries reveal some interesting observations. The category "*positive emotions or actions*" had an inter-category association with most of the other categories in all five countries (indicated by connecting lines). However, very few inter-category associations were observed among other categories. Categories such as "*party and alcohol*" and "*religion and spirituality*" are present in all countries except India, which may indicate some skewed responses from this sample. The category "*body structure*" was only identified by responses of participants in Portugal.

Figure 6 presents the global (all countries) co-occurrence analysis, which has a similar format structure and observations as the other countries, indicating that many of the responses across countries are similar, although some differences can be noted.

[Figure 6 near here]

Discussion

The current study explored the social representation of 'music' in India, Iran, Portugal, United Kingdom, and United States. The content analysis revealed 18 main categories from all participants' responses, although not all categories were found in all five countries. Overall, the results indicate that music is generally considered to bring positive emotions for people within these societies, although a small percentage of responses indicate some negative consequences of music. Further Chi-square analysis indicated significant association between the countries regarding positive, neutral, and negative connotations, i.e., most positive connotations about music were found in the responses obtained from Iranian participants, followed by Portuguese participants, whereas the most negative connotations about music were found in the responses obtained from Indian participants, followed by Iranian participants. The results imply that there exist some cultural differences between the countries in the participants' perceptions about music, but also some similarities. In addition, it is also evident that there are some influences of religion and spirituality in relation to the social representation of music. For example, Iran is a country with strong Islamic roots. In Islamic religion, it is common to use music for gatherings of melodious remembrance of Allah and His Messenger, whereas the other cultures seem to attach less importance to liturgical music. This is evident from the study results where participants from Iran have a higher frequency of responses in the category "religion and spirituality."

Although some differences were observed among the countries, the category "*positive emotions or actions*" stands out as the biggest factor in relation to music in all five countries, indicating that this phenomenon is universal. Responses for other categories were relatively

limited. Other frequently occurring categories were: *form of escape*, *music genre*, *music terminology*, and *musical instruments*. The category "*negative emotions or actions*" was also reported frequently in all countries except in India. Researchers suggest that people value music primarily because of the emotion it evokes (Juslin & Vastfjall, 2008). In this study, it is clear that irrespective of culture and country, the participants perceive music as something that induces emotions, especially positive emotions and actions. The distinction between responses for "positive emotions or actions" and "negative emotions or actions" was based on consideration of the meaning of the words or phrase reported, and also upon considering the connotations associated with that particular response. For example, responses such as motivation and relaxing possessed a positive meaning and also had positive connotations; hence, the responses belonged to the category "positive emotions or actions." On the other hand, responses such as distracting and annoying carried a negative meaning and were associated with negative connotations; hence, they belonged to the category "negative emotions or actions."

It is noteworthy that none of the participants reported ear and hearing problems such as tinnitus and hearing loss due to music exposure, even though some reported that music was associated with negative emotions such as that it could be unpleasant and uncomfortable. In a recent parallel study on the perception of young adults towards 'loud music,' the results suggest that the two largest factors that emerged were "*positive emotions and action*" and "*negative emotions and actions*" (Manchaiah et al., Submitted). In that study. "*ear and hearing problems*" was also one of the most frequently occurring category for loud music. These results indicate that most young adults are aware that loud music listening can have equally higher positive and negative consequences. Hence, significant outcomes of studying their perception towards music may provide helpful information on developing 'health

behavior change' and education programs for young adults to initiate healthy music listening habits because it is important to understand the influence of positive perception on behavior change toward music while developing interventions to improve healthy listening habits (Zhao et al., 2010; Jiang et al., 2016). In addition, the results derived from this study will be useful for better understanding of music therapy theory and its applications in the field of clinical audiology (e.g., tinnitus intervention).

Methodological Considerations and limitations

In the present study we have collected data from five different countries in order to understand cultural differences and similarities in young adults' perceptions toward music exposure. However, there are some methodological limitations to be considered. Factors such as gender and socio-economic status have previously been found to influence attitudes towards exposure to loud music and the use of hearing protection. In the present study, factors such as gender and socio-economic status have not been analyzed. The differences in music listening hours between the countries were found. Participants from India reported the lowest listening mean of 2.68 hours a week, whereas participants from the United States reported the highest mean of about 25.52 hours a week. The participants from the other three countries reported listening between 12 to 18 hours a week. It is difficult to know if these differences are due to cultural differences between the countries, or due to sampling. Hence more research on larger samples is needed in order to clarify if these differences are caused by cultural differences or not. These differences in listening habits may have affected the result. Furthermore, the study sample was recruited by using a convenience sampling, which may have introduced some bias. However, the responses give rise to a central node on "*positive emotions or actions,*" which indicate a certain level of coherence within as well as across countries.

Conclusions

The results derived from the present study indicate that music is generally considered to bring positive emotions for people within these societies, although a small percentage of responses indicate some negative consequences of music listening. Significant differences between the countries regarding positive, neutral, and negative connotations imply that there are some cultural differences between the countries in the participants' perceptions about music, which may provide helpful information towards understanding the influence of positive perception on behavioral change towards music while developing interventions to improve healthy listening habits.

Conflict of Interest

None to declare.

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Tables

Table 1: Population details in India, Iran, Portugal, United Kingdom, and United States

Country	India	Iran	Portugal	United Kingdom	United States of America
Population (in Millions)	1,210	77	11	64	320
Continent	Asia	Asia	Europe	Europe	North America
City where data were collected	Mysore	Tehran	Porto	Cambridge	Beaumont
Population in city where data were collected (in Millions)	1	8.3	1.3	0.13	0.11
National language	Hindi	Farsi	Portuguese	English	English
Language of local place if different	Kannada	Farsi	Portuguese	English	English

Table 2: Demographic details

	All countries (n=534)	India (n=110)	Iran (n=100)	Portugal (n=101)	UK (n=122)	USA (n=101)
Age in years Mean±SD (range)	21.04±2.5 (18 – 25)	21.05±2.2 (18 – 25)	22.24±2.6 (18 – 25)	19.72±1.8 (18 – 25)	22.02±2.6 (18 – 25)	19.99±1.8 (18 – 25)
Gender (% female)	56.6	50	53	63.4	61.5	54.5
Education (%)						
▪ Compulsory	27.5	0	52	0	0	94.1
▪ Secondary	62.2	72.7	48	96	82.8	5.9
▪ Tertiary	10.3	27.3	0	4	17.2	0
Profession (%)						
▪ Non-manual	18.2	23.6	25	3	32	4
▪ Manual	0.7	0	3	0	0.8	0
▪ Student	81.1	76.4	72	97	67.2	96
Music listening in hours in a week Mean±SD (range)	14.47±19.7 (0 – 75)	2.68±1.5 (0 – 17)	14.08±12.2 (2 – 68)	12.45±12.8 (2 – 72)	17.93±16.6 (1 – 70)	25.52±33.5 (2 – 75)
Play music (Yes in %)	21.9	18.2	35	15.8	37.7	Data not available

Table 3. Frequencies and percentages regarding positive, neutral, and negative connotations distributed by country

	Positive		Neutral		Negative	
	n	%	n	%	n	%
India	337	61.3	113	20.5	100	18.2
Iran	407	82.2	52	10.5	36	7.3
Portugal	407	80.6	70	13.9	28	5.5
UK	472	77.4	94	15.4	44	7.2
USA	367	72.7	122	24.2	16	3.1

Table 4: Frequency (percentage) of categories reported among different countries for music

		Number of responses (% responses)					
No	**Categories**	**India**	**Iran**	**Portugal**	**UK**	**USA**	**All countries**
1	Acoustics (e.g.: sound, decibel, noise, loudness, intensity)	1(0.2)	3(0.7)	23(4.8)	38(6.3)	42(8.4)	107(4.1)
2	Body Structure (e.g.: ear, vocal cords)	-	-	13(2.7)	-	-	13(0.5)
3	Entertainment (e.g.: MTV, radio)	7(1.3)	12(2.5)	9(1.9)	18(3)	20(4)	66(2.5)
4	Form of Escape (e.g.: freedom, distraction, isolation, dream)	15(2.8)	19(3.9)	16(3.4)	8(1.4)	6(1.2)	64(2.5)
5	Friends and Family (e.g.: neighbors, friends, family)	-	8(1.7)	13(2.7)	15(2.5)	3(0.6)	39(1.5)
6	Location (e.g.: festivals, work, concerts, bar)	-	19(3.9)	19(4)	17(2.8)	11(2.2)	66(2.5)
7	Memories (e.g.: moments, nostalgia)	-	15(3.1)	12(2.5)	8(1.4)	1(0.2)	36(1.4)
8	Music Genre (e.g.: disco, jazz, rock, heavy metal)	1(0.2)	7(1.5)	-	27(4.5)	42(8.4)	77(3
9	Music Terminology (e.g.: rhythm, melody, music, song)	8(1.5)	22(4.5)	40(8.3)	82(13.5)	78(15.5)	230(8.8)
10	Musical Artists, Groups, or Bands (e.g.: specific artist name, band)	-	14(2.9)	38(7.9)	26(4.3)	26(5.2)	104(4)
11	Musical Instruments (e.g.: piano, flute, guitar)	-	36(7.3)	41(8.6)	29(4.8)	10(2)	116(4.4)
12	Nature (e.g.: sea, mountains, rain...)	7(1.3)	17(3.5)	-	-	3(0.6)	27(1.1)
13	Negative Emotions or Actions (e.g.:	-	39(7.9)	17(3.6)	24(4)	6(1.2)	86(3.3)

	sadness, discomfort, unpleasant sensations, confusion, irritation)						
14	Party and Alcohol (e.g.: nightlife, DJ, drunk, night)	-	7(1.5)	21(4.4)	15(2.5)	6(1.2)	49(1.9)
15	Personal Listening Devices and Transducers (e.g.: earphones, phones, mp3, speakers)	5(1)	5(1.01)	19(4)	12(2)	10(2)	51(2)
16	Positive Quality of Life (e.g.: wellness, well-being, life quality)	7(1.3)	-	9(1.9)	-	-	14(0.6)
17	Positive Emotions or Actions (e.g.: joy, happiness, singing, dancing, fun)	499(90.8)	256(51.8)	191(39.63)	289(47.4)	238(47.2)	1,473(55.8)
18	Religion and Spirituality (e.g.: spirit, God)	-	16(3.3)	1(0.3)	2(0.4)	3(0.6)	22(0.9)

Figures

Figure 1: Co-occurrence analysis index for India, showing main categories related to music listening and their associations with each other (N=110)

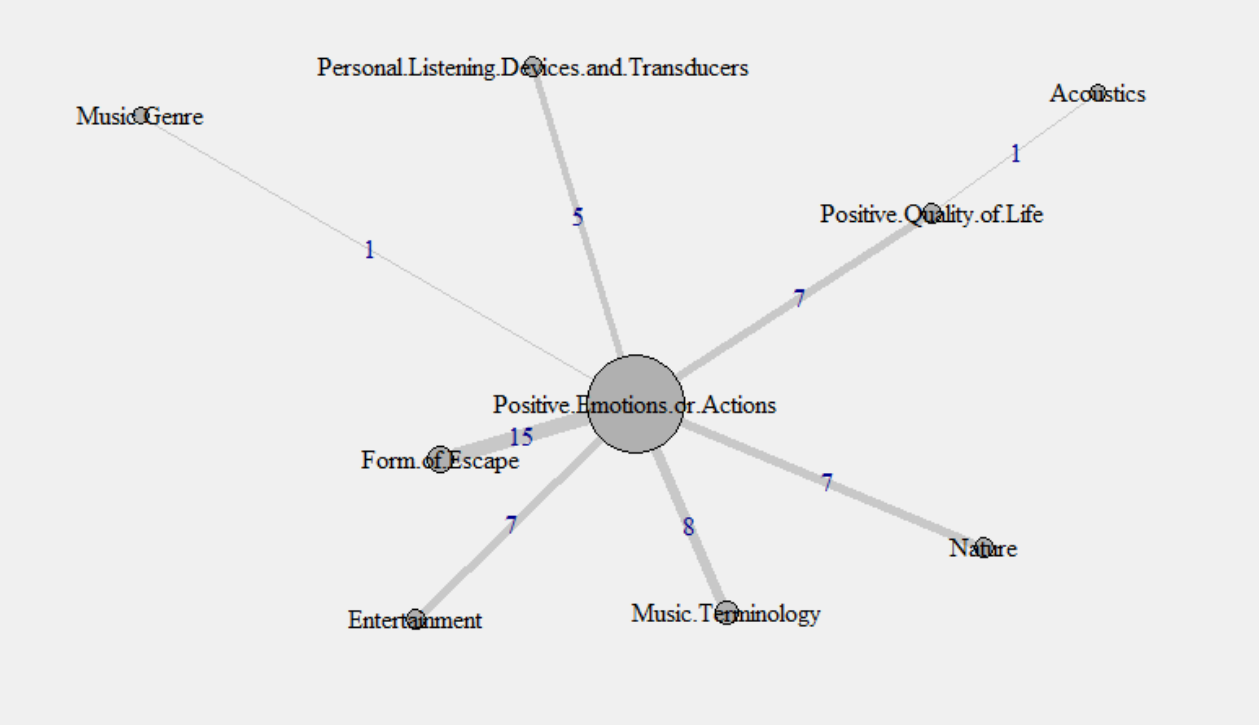


Figure 2: Co-occurrence analysis index for Iran, showing main categories related to music listening and their associations with each other (N=100)

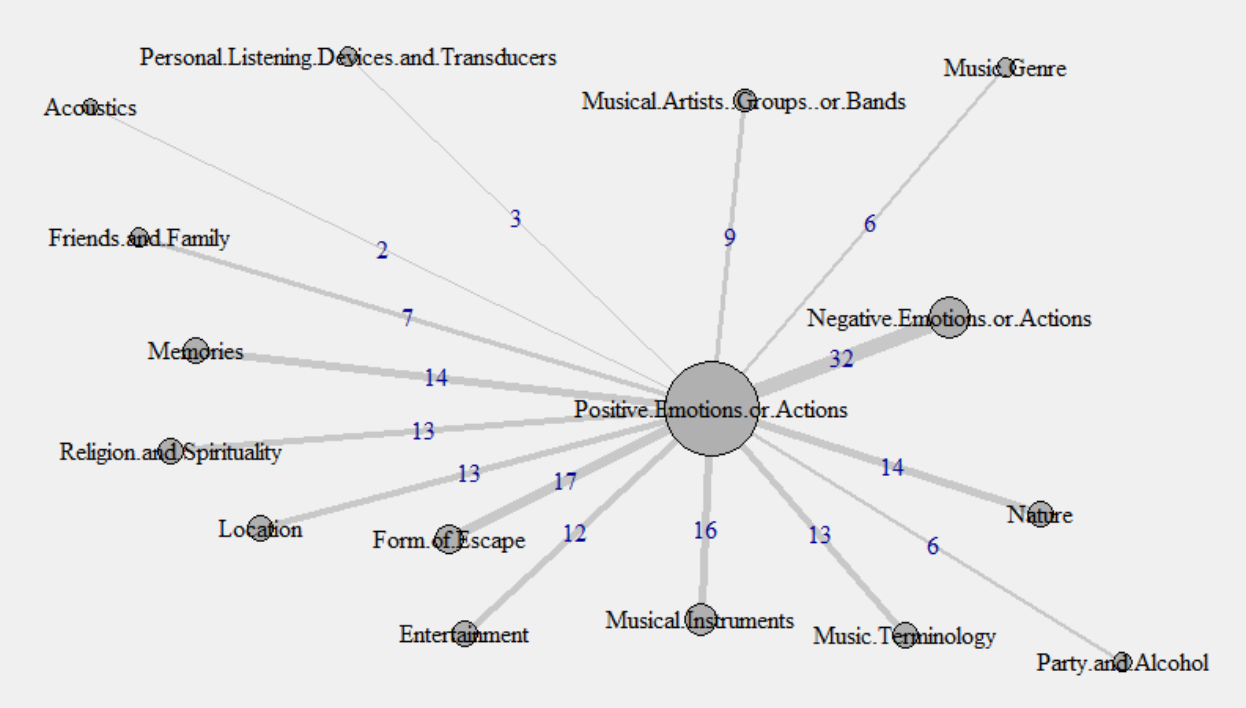


Figure 3: Co-occurrence analysis index for Portugal, showing main categories related to music listening and their associations with each other (N=101)

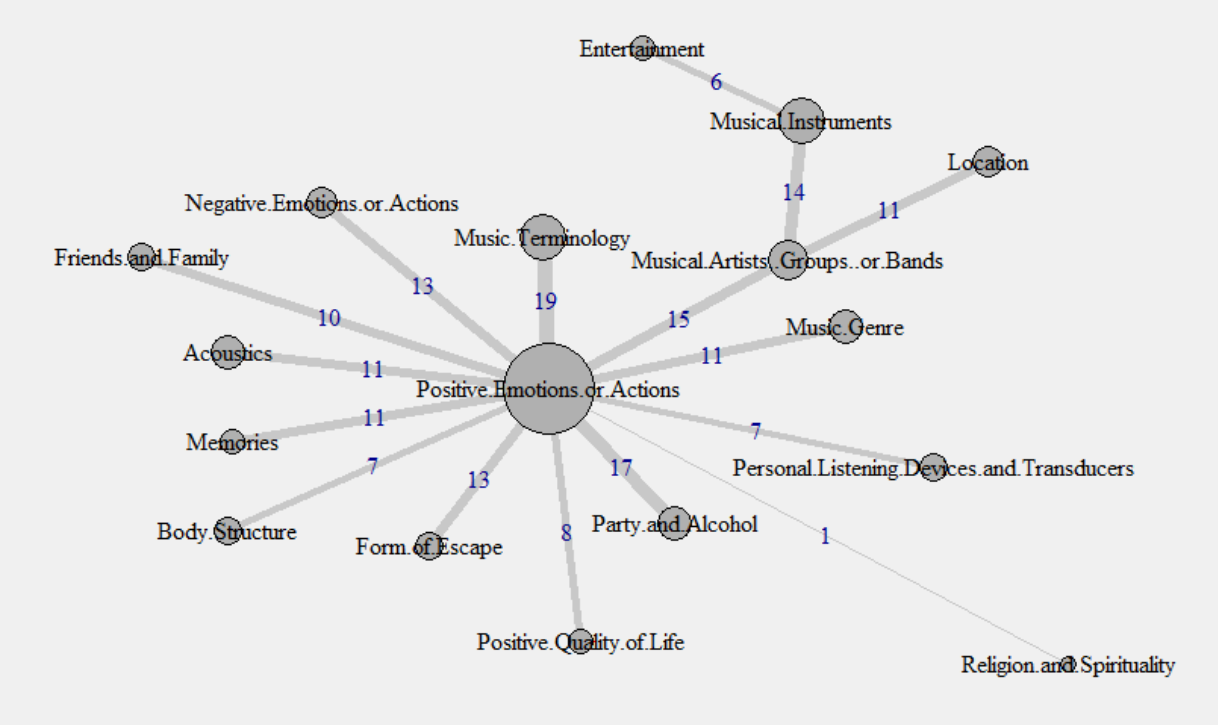


Figure 4: Co-occurrence analysis index for the United Kingdom, showing main categories related to music listening and their associations with each other (N=122)

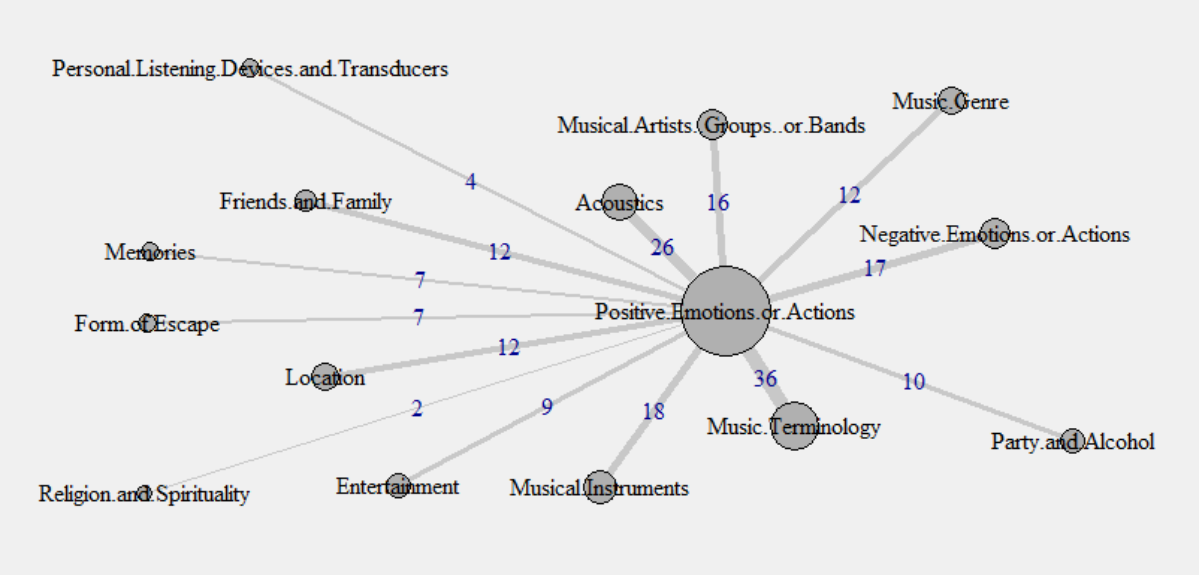


Figure 5: Co-occurrence analysis index for the United States, showing main categories related to music listening and their associations with each other (N=101)

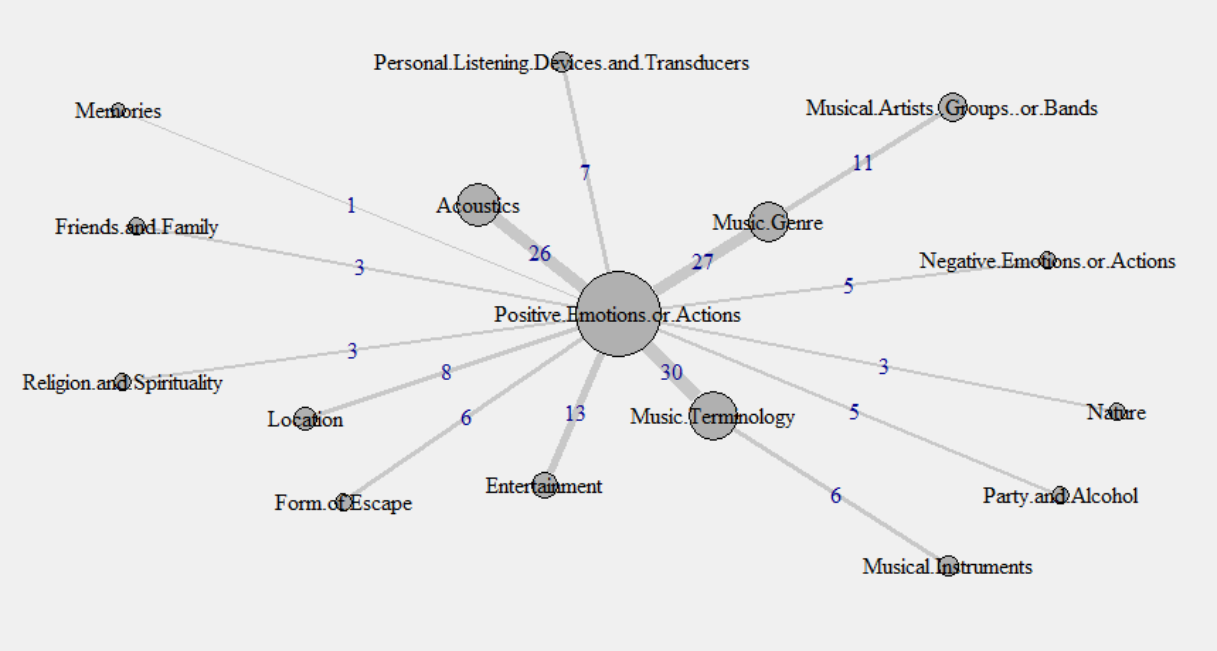
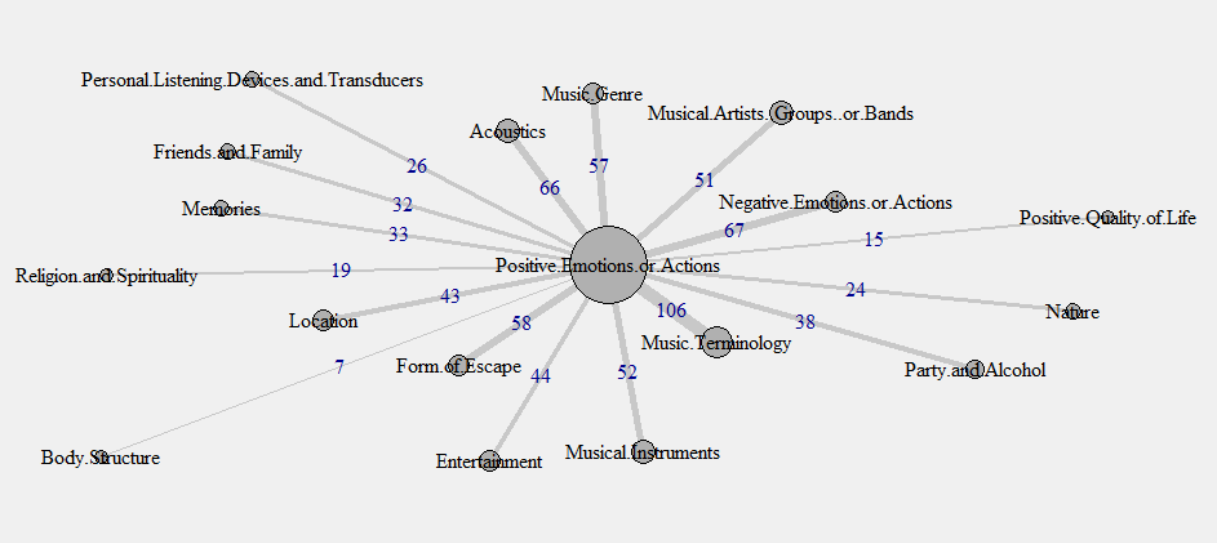


Figure 6: Global co-occurrence analysis index, showing main categories related to music listening and their associations with each other (N=534)



Appendix: Questionnaire

Section 1: Demographic details

Age:	Gender:
Maximum level of education achieved:	Profession:
How long (in hours) do you listen to music every week?:	

Section 2: Free associations about "Music"

- *Stage 1:* Please write five words or expression that comes spontaneously to your mind when you think about the term 'music'.
- *Stage 2:* Determine if the association represents a positive (+), neutral (0) or negative (-) aspect of 'loud music' and enter them in front of the words or expressions by ticking the relevant box.

Words or expressions	**Connotations**		
	Positive	**Neutral**	**Negative**

Response to Reviewer Comments

Responses to Reviewer 1

General comments:

Issue 1:
There were quite a few grammatical and stylistic corrections that needed to be made and I have attached a pdf with those corrections in comment bubbles in the right hand margin.

Response to Issue 1:
First of all, we would like to thank you for all the corrections and suggestions. We have found they are very helpful. We have considered comments into the present version, and have clarified the main issues in the revised manuscript, which has been thoroughly checked by a native English speaker, Dr Ashley Dockens.

Issue 2:
This is a very difficult area to study and I am not sure that the chosen tools were the best (and I am not sure what tools would actually be better). However I am left with the concern of what is the relevance of the study other than to demonstrate that a subjective perception model can be useful??

Response to Issue 2:
Thanks for this comment. We agreed this is a very difficult area to study. In the present study, we intended to explore the social representation of 'music' in India, Iran, Portugal, United Kingdom and United States, as well as analyze cross-cultural differences or similarities between the countries. The Theory of Social Representation (TSR) is developed by psychologists and social scientists. However, the theory and the methodology used to study the social representation has been well tested/ In addition, it has also been applied in disability research. Hence, we believe that this would add to growing literature in audiology in the area "music exposure and hearing loss".

We apologize for not providing more detailed information on TSR. Considering the length of the article and importance of TSR, as suggested, more details about TSR has been added in the relevant section (i.e., pages 4-5),

Issue 3:
I am also a bit concerned about the diversity of the languages studied. For example, why not examine Hindi, one of the world's largest languages, rather than one that may even be Dravidian in linguistic origin. It would have been interesting to compare Urdu spoken in Pakistan with Farsi spoken in Iran - both are Indo - Iranian languages and both have the same religious and cultural Islamic roots.

Response to Issue 3:
We feel this comment is important. We understand the importance of including various languages in the present study. However, as the first study of its kind, there were a lot of challenges in terms of data collections during carrying out this multi-center international study. Unfortunately the data collections were limited to centers where we had reliable research partnerships. As suggested, we may include other major languages and conduct comparisons in the future studies.

Issue 4:
This is an interesting manuscript but I am left with questions about how this information can be used in a clinical setting or even with future academic studies.

Response to Issue 4:
We feel this comment is important and we appologize for not indicating clearly on how this study relates clinically or in applying it to the audiology profession. According to the aim of this study and methodology used, we believe that the significant outcomes will provide helpful information on developing 'health behavior change' and education programme for young adults to initiate healthy music listening habits. In addition, the results derived from this study will be relevant for music therapy theory and its applications in the field of clinical audiology (such as tinnitus intervention).

To further clarify this issue, we have added the following paragraph in the relevant sections, i.e.,

Line by line Specific Comments:

Issue	**Response and Clarification**
Abstract: Significant differences?	We apologize for the careless mistake. This word has been added.
Abstract: Am I understanding this correctly- Iran was both near the top and near the bottom of the connotation scales?	We apologize for the confusion. To further clarify the issue, this sentence has been revised as follows, i.e., Most positive connotations about music were found in the responses obtained from Iran participants (82.2%), followed by Portuguese (80.6%), while most negative connotations about music were found in the responses obtained from Indian participants (18.2%), followed by Iran (7.3%)
Page 3, line 10: It would be interesting to look at the role of music in the religious	We feel this comment is important. As suggested, we have added a paragraph

followings of Iranian culture and their Islamic roots. The other cultures have less importance for liturgical music.	and discussed relevant topics in the discussion section.
Page 3, line 23: 2000 Hz and not 2000 kHz	We apologize for the careless mistake. This word has been corrected.
Page 3, line 23: I am sure that there is a more modern reference than 1931.	As suggested, this reference has been replaced by another publication (i.e., Cai et al., 2013) in the revised manuscript.
Page 3, line 50: I am skeptical about this. Even if it is true, I would suggest leaving this sentence out. It doesn't contribute to the manuscript.	We appreciate this useful comment. As suggested, after careful consideration, we have revised this sentence completely. i.e., 'For example, Juslin (2013) suggested emotions are highly correlated with musical expressions, depending on the precise process through which the emotional contents in music are transmitted and perceived by listeners. Moreover, music can provide subtle meanings, which can have the positive effects on many individual lives (Ross, 2009).'
Page 4, line 5: Unusual stylistic syntax-suggest changing this phrase.	We apologize for the confusion. As suggested, this phrase has been revised as follows, i.e., 'However, people may interpret the meaning of a music piece differently, no matter how the music is played in the way which the composer or performer intends or intended to express.'
Page 4, line 14: "....intends or intended to express".	We apologize for the careless mistake. This word has been added.
Page 4, line 10: Delete the word "on"	We apologize for the careless mistake. This word has been deleted.
Page 4, line 21: Change which to that (its an unrestricted clause.	We apologize for the careless mistake. This word has been corrected.
Page 4, line 43,47: "For a listener..." and not "For listener..."	We apologize for the careless mistake. This word has been corrected.
Page 4, line 50: "has fallen" and not "is fell"	We apologize for the careless mistake. This word has been corrected.
Page 4, line 55: piece as having great significance....	We apologize for the careless mistake. This word has been added.

Page 5, line 5: I think that you meant to say "Moreover, over the last decade the literature has demonstrated that music listening has become....	As suggested, this phrase has been revised.
Page 5, line 15: wary, and not ware...	We apologize for the careless mistake. This word has been corrected.
Page 5, line 27: Sounds like a very redundant theory :)	We apologize for the careless mistake. The word of redundant theory has been deleted.
Page 5, line 41: For such a quote, please add page number next to date, e.g. (Joffe, 2003, p. 46).	We apologize for the careless mistake. As suggested, the page number has been added.
Page 6, line 13: What about Cardiff Wales? or were no subjects from Cardiff?	Thanks for this comment. Unfortunately no valid data were obtained from Cardiff Wales in the present study.
Page 7, line 10: should we say, "submitted 2016" ??	As suggested, the detail of this reference has been added.
Page 7, line 33: Why not Hindi (or would this have been too close to Farsi, since both are Indo-Iranian languages). Is Kannada Dravidian?	We apologize for the confusion. We understand the importance of including various languages in the present study. However, as the first study of its kind, there were a lot of challenges in terms of data collections during carrying out this multi-center international study. According to the study design, the data collections were only limited to centers where we had reliable research partnerships.
Page 7, line 44: I am not familiar with this technique- should be stylistically say "a text mining technique" or is there only one of them?	We apologize for the confusion. To further clarify the issue, we decided not to include the word of 'text mining' in order to avoid any confusion in the revised manuscript.
Page 8, line 5: Grammar: "... a co-occurrence analysis was performed..."	We apologize for the careless mistake. This sentence has been corrected.
Page 8, line 55: Previously you had said that only the sex, age and profession was asked about. Education as well?	We apologize for the confusion. According to the study design, besides some demographic data (e.g. gender, age, and profession), information on education of the participants was also collected. To further clarify the issue, we have revised the relevant part as follows: 'No personal information was collected from respondents, except some

	demographic data (i.e., gender, age, education and profession).'
Page 9, line 5: Unusual wording. Perhaps just say that those in the US has a lower frequency of post secondary education?	As suggested, this phrase has been revised as follows, i.e., 'Participants in India, Portugal and the United Kingdom had higher frequency of secondary education, whereas participants in the United States had lower frequency in the secondary and post-secondary education.'
Page 9, line 7: Not sure what "tertiary" education means	We apologize for the confusion. What we would like to describe is the post-secondary education. To avoid the confusion, we have revised this word.
Page 10, line 9: Very difficult to make judgments about whether certain things are positive or negative.	We agree this comment completely. We have added a paragraph and discussed this issue in the discussion section.
Page 10, line 30,36: represents and not represent	We apologize for the careless mistake. This word has been corrected.
Page 11, line 3: much and not mush :)	We apologize for the careless mistake. This word has been corrected.
Page 11, line 32: ".... a small..."	We apologize for the careless mistake. This word has been corrected.
Page 12, line 7: stands and not stand	We apologize for the careless mistake. This word has been corrected.
Page 12, line 21: a small and not small	We apologize for the careless mistake. This word has been corrected.
Page 12, line 37: ".... the two largest factors...." and not "big"	We apologize for the careless mistake. This word has been corrected.
Page 12, line 41: date submitted?	As suggested, the detail of this reference has been added.
Page 13, line 10: ".... could be the strategies going forward to reduce the ...."	As suggested, this phrase has been revised.
Page 13, line 15: Prior to discussing methodological considerations, it would have been interesting to include a section on the cultural/linguistic/religious similarities and differences between the groups. For example, Farsi and Hindi have similar linguistic roots and I suppose that Pakinstani and Farsi would have been an even better comparison- both have	We apologize for the confusion. We understand the importance of including various languages in the present study. However, as the first study of its kind, there were a lot of challenges in terms of data collections during carrying out this multi-center international study. According to the study design, the data collections were only limited to centers where we had reliable research

linguistic and religious similarities. I am not sure why Hindi was not selected as the representative language from India. And why was Portuguese selected? It seems like an out-lier language	partnerships.
Page 13, line 41: due and not du	We apologize for the careless mistake. This word has been corrected.
Page 16, line 48: Submitted where?	As suggested, the detail of this reference has been added.
Page 17, line 28: something more current?	As suggested, this reference has been replaced by another publication (i.e., Cai et al., 2013) in the revised manuscript.

Responses to Reviewer 2:

General comments:

Issue 1:
This paper describes a sociological study around the perceptions and reactions of young adults to music, across five different countries. This was done by a free association task where members of the public was asked to provide 5 words they associate with music, and then classify these are being positive, negative or neutral. I don't feel this paper is relevant to IJA, or would be of interest to the IJA readership. It would seem more appropriate for a sociology, or music - psychology journal, as it doesn't relate to hearing per se (i.e. hearing loss, hearing devices, etc). Rather it is around perceptions of the emotions or reactions that arise in individuals when listening to music. I don't see the clinical relevance of this paper for hearing professionals, but could see that those in a sociology or music/psychology field may find it interesting.

Response to Issue 1:
We feel this comment is important and we appologize for not indicating clearly on how this study relates clinically or in applying it to the audiology profession. According to the aim of this study and methodology used, we believe that the significant outcomes will provide helpful information on developing 'health behavior change' and education programme for young adults to initiate healthy music listening habits. In addition, the results derived from this study will be relevant for music therapy theory and its applications in the field of clinical audiology (such as tinnitus intervention).

To further clarify this issue, we have added the following paragraph in the relevant sections, i.e.,

Issue 2:
I have made some additional comments below, which may assist the authors should they consider submitting it to a different journal.

In general, I would suggest checking the grammar and writing. There are many places where the grammar is not correct – for example articles such as the word 'a', 'the', 'an' are missing or incorrectly used. There are also sections which are unclear or not well written, and I struggled at times to understand what the authors' point was.

Response to Issue 2:
We would like to thank you for all the corrections and suggestions. We have found they are very helpful. We have considered comments into the present version, and

have clarified the main issues in the revised manuscript, which has been thoroughly checked by a native English speaker, Dr. Anne Rudholm.

Line by line Specific Comments:

Issue	Response and Clarification
p. 2, ll. 16/17 – (Results) there's a word missing between 'significant' and 'between'.	We apologize for the careless mistake. The missing word (differences) has been added.
p. 3, ll. 19 - 23 – where the frequencies of the different instruments are provided, are these the fundamental frequencies, or frequency range inclusive of harmonics?	We apologize for the confusion. The frequencies of different instruments we mentioned are the frequency range, rather than the fundamental frequencies. To further clarify this issue, the relevant sentences have been revised as follows, i.e., For example, the frequency range produced by a double bass runs from 50 Hz to 2000 Hz, and from 200 Hz to about 10 kHz for a violin.
p. 3, ll. 25 - 30 – The last sentence of this first paragraph is confusing.	We appreciate this useful comment. As suggested, after careful consideration, we have revised this sentence completely. i.e., 'For example, Juslin (2013) suggested emotions are highly correlated with musical expressions, depending on the precise process through which the emotional contents in music are transmitted and perceived by listeners. Moreover, music can provide subtle meanings, which can have the positive effects on many individual lives (Ross, 2009).'
p. 4, ll. 5 – the first sentence of the first paragraph on this page is confusing, and is not grammatically correct (e.g. "music may be meant differently…")	We apologize for the confusion. As suggested, this phrase has been revised as follows, i.e., 'However, people may interpret the meaning of a music piece differently, no matter how the music is played in the way which the composer or performer intends or intended to express.'
p. 4, ll. 13/14 – grammar "to be important to influence on"	We apologize for the careless mistake. This word of 'on' has been deleted.

p. 4, ll. 21 – grammar "reflects influential of regional characteristics"	We apologize for the careless mistake. This word of 'influential' has been revised as 'influence'.
p. 4, ll. 22 - 25 - I don't know what this sentence, beginning with "In addition" means.	We apologize for the confusion. To further clarify this issue, after careful consideration, we decided to delete these two words (i.e., In addition). In the meantime, the relevant sentences have been revised as follows, i.e.,
p. 4, ll. 34 – grammar "In cultural context"	We apologize for the careless mistake. This phrase and relevant sentnece have been corrected.
p. 4, 2nd para – I don't know what this paragraph means, or the relevance of it. The grammar also needs attention.	We apologize for the confusion. To further clarify this issue, after careful consideration, we decided to delete these two words (i.e., In addition). In the meantime, the relevant sentences have been revised as follows, i.e.,
p. 5, ll. 5 – delete "the" before "music listening"	As suggested, this word has been deleted.
p. 5, ll. 11 - 13 – references around the 'safe noise exposure levels' (e.g. 2dB increase, half the safe listening exposure time) would be relevant.	As suggested, relevant references on noise exposure guidance have been included in the revised manuscript.
p. 5, ll. 16 - 18 - reference?	As requested. The appropriate reference has been included in the revised manuscript.
p. 5, ll. 27 – is it Theory of Social Representation, or Social Representation Theory?	We apologize for the careless mistake. As suggested, we have revised the term of TSR by keeping it consistently.
p. 5, ll. 41 – Should be "A previous study…"	As suggested, this phrase has been corrected.
p. 5, ll. 43 - 48 - what were the results of the Manchaiah et al. studies cited? Grammar needs attention.	We apologize for the confusion. As requested, we have extended this part by providing more information in the revised manuscript.
METHOD Table 1 – what are the references for the information in this table? Data Collection – What information was collected in the questionnaire? At present, it reads as if the only thing in the questionnaire, and the only data collected, was the free association task	We apologize for the confusion. All information included in Table 1 was found in the internet. As requested, we have provided detailed information in the relevant part of the Methodology section. Moreover, we have re-written relevant part of the Methodology section by providing more detailed information

were participants had to give up to 5 words/phrases for 'music', and 'loud music'.	regarding the data collection.
Data analysis – I'm not clear how the qualitative content was analysed – i.e. was it thematic analysis? What qualitative analysis approach was used? How were the categories determined? What is meant by "The grouping of words was checked by multiple comparisons among researchers"?	We apologize for the confusion. As requested, we have re-written relevant part of the Methodology section by providing more detailed information regarding the data analysis.
p. 8, ll. 5 – grammar "In a second step was made a co - occurrence…"	We apologize for the careless mistake. This sentence has been corrected.
Table 2 needs to provide the range as well (e.g. range of ages)	We have provided these details in Table 2 as suggested.
p. 9, ll. 5 – How was the demographic data collected? This isn't detailed in the methods section.	We apologize for the confusion. As requested, we have re-written relevant part of the Methodology section by providing more detailed information regarding the data collection
p. 9, ll. 32 - 39 – corrections for multiple comparisons need to be made, as at least 60 comparisons would have been made in this analysis (5 countries (so 20 different between - country comparisons), then 3 levels of connotations).	We appreciate this comment. However, we currently only performed only Chi square analysis (i.e., 5 countries vs 3 connotations in cross tabs), hence the results suggested us only if there was any relationship between there factors. We did not perform individual comparisons and hence we believe it was not necessary to consider corrections for multiple comparisons. This method suits better for the purpose of this study in order to avoid the complexity of the multiple comparisons.
p. 9, response categories – It's not clear how these categories were developed, or how the classifications were made. The authors haven't actually stated what were the exact common words/phrases that respondents came up with in the free association task, and the frequencies of these words/phrases?	We apologize for the confusion. As mentioned in the methodology section, the content analysis was used in the present study. We have provided a certain amount of information with a reference. Considering the length of the article and importance of this analysis, as suggested, more details have been added in the relevant section, together with some examples.
p. 10, 2nd para – more interpretation	As requested, we have added more

here, for the countries/figures is required, as most of the readers will not be familiar with co‐occurrence analyses.	explanations to interpret the figures associated with co-occurrence analyses in the result section
DISCUSSION p. 12, para 1 – What is the significance of this? It is rather meaningless, and I don't see the relevance of it to audiologists, hearing professionals etc.	We feel this comment is important and we appologize for not indicating clearly on how this study relates clinically or in applying it to the audiology profession. According to the aim of this study and methodology used, we believe that the significant outcomes will provide helpful information on developing 'health behavior change' and education programme for young adults to initiate healthy music listening habits. In addition, the results derived from this study will be relevant for music therapy theory and its applications in the field of clinical audiology (such as tinnitus intervention). To further clarify this issue, we have added the following paragraph in the relevant sections, i.e.,
p. 12, ll. 34‐41 – The results discussed here aren't presented in the results section, and should not be introduced in the hearing professionals etc.	We apologize for the confusion. We agreed this comment completely. As requested, we have revised the relevant part.
p. 12, ll. 43 on (to p. 13) – not relevant to this paper, and does not fit.	We apologize for the confusion. We agreed this comment completely. After considering this comment carefully, we decided to remove several sentences in this part.
p. 13, ll. 30‐37 – Could this also be due to the interpretation/translation of the question – for example, could there be cultural differences in how the question is interpreted, such as passive vs. active music listening?	We agreed this comment completely. To clarify this issue, we have revised this section and explain the situation.
p. 13, ll. 41 – due (not du)	We apologize for the careless mistake. This word has been corrected.
p. 13, ll. 50 – provide examples of the bias that needs to be considered.	We apologize for the careless mistake. This reference has been included in the revised manuscript.
p. 13, ll. 54‐57 – Doesn't make	We apologize for the confusion caused by

sense. How does it provide reliability?	the careless mistakes. After considering this comment carefully, we have revised this part by removing the last sentence.
CONCLUSIONS I don't see how the conclusion around not associating music with being a health risk and/or developing hearing loss/tinnitus etc, could be derived from this study. Participants weren't asked if they associated music with developing hearing loss/tinnitus, and given that it's a free association task where up to 5 words/phrases may be provided – just because hearing loss/tinnitus/health risk weren't the first 5 words/phrases that came to the respondent's mind at the time, doesn't mean that there's no association.	We apologize for the confusion. We agreed this comment completely. As requested, we have revised the conclusion section by highlighting the key points directly derived from this study.

Responses to Reviewer 3:

This is an important topic that should be of interest to readers of IJA. I have some general comments and then some line by line comments.

General comments:

Issue 1:
Since it was mentioned in the section of methodological considerations that it is difficult to know if these differences are due to cultural differences or sampling, I wonder if a statistic such as effect size (Cohen's d) analysis could be included to validate whether the sample sizes were sufficient.

Response to Issue 1:
Thank you for your comment. We feel that this comment is important. However, due to the main purpose, sample size and methods used in the present study (i.e., content analysis of the frequency of the responses), after careful consideration, we felt that it may be not needed to calculate effect sizes analysis (i.e., Cohen's d test).

Issue 2:
The format of references should be carefully revised according to the IJA instruction.

Response to Issue 2:
Thank you for your comment. We apologize for not providing correct referencing format in the previous manuscript. As suggested, we have carefully revised the format of references according to the IJA instruction.

Issue 3:
There are some stylistic and grammatical errors and I wonder if these can be reviewed to improve the ease of reading.

Response to Issue 3:
Thank you for this comment. As suggested, we have considered all comments and suggestions into the present version, and have clarified the specific issues in the revised manuscript, which has been thoroughly checked by a native English speaker, Dr. Anne Rudholm.

Line by line Specific Comments:

Issue	Response and Clarification
Page 2, line 8; page 5, line 27: Please be consistent with the full name of TSR, the theory of social representations or the Theory of Social Representations.	We apologize for the careless mistakes. As suggested, we have revised the term of TSR by keeping it consistently.

Page 3, line 52: Could not find the reference for (Ross, 2009).	We apologize for the careless mistake. This reference has been included in the revised manuscript.
Page 4, line 43: Could not find the reference for (Dolan & Sharot, 2011).	We apologize for the careless mistake. This reference has been included in the revised manuscript.
Page 5, line 27: It is unclear with "the Theory Social Representations Theory ".	We apologize for the careless mistake. The word of redundant theory has been deleted.
Page 5, line 27: Expand this section about the theory of social representations (TSR). Discuss more about TSR for the first time readers	Thanks for this comment. Considering the length of the article and importance of TSR, as suggested, more details about TSR has been added in the relevant section
Page 6, line 28: "The countries differ in language, culture and economy (see Table 1)." In table 1, only population and language are listed. I wonder if the culture and economy could be included.	We apologize for the careless mistake. As suggested, more information on culture and economy has been added in the Table 1.
Page 7, line 23: Could not find the reference for (Abric, 1994).	We apologize for the careless mistake. This reference has been included in the revised manuscript.
Page 10, line 56: Change "all country" to "all countries".	We apologize for the careless mistake. This word has been corrected.
Page 13, line 41: "du to" should be "due to".	We apologize for the careless mistake. This word has been corrected.
Page 16, line 14: Could not find the citation for Kollmuss A, Agyeman J. (2002).	We apologize for the careless mistake. This reference has been removed in the revised manuscript.
Page 16, line 54: Could not find the citation for Moscovici S. (1961).	We apologize for the careless mistake. This reference has been removed in the revised manuscript.